

DRAFT
PEER REVIEW
BIOLOGICAL UNDERPINNINGS OF ENVIRONMENTAL REQUIREMENTS
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The Water Management Development Team agrees that peer review of biological underpinnings of environmental requirements is necessary as part of the Development Team Process. This paper describes how such peer review might be carried out.

Obviously, peer review of some issues cannot be accomplished soon enough to be used in the Development Team process. However, some peer review is possible soon, provided the necessary people are available. This paper concentrates on what might be termed "near term peer review."

Topics for peer review are described below along with the method of conducting the peer review and the people who would participate.

Effect of river flow, exports, and barrier installation on survival of outmigrating San Joaquin River smolts

Peer Review Team: Bruce Herbold, Chuck Hanson, Pat Brandes, Phyllis Fox.

A number of data points have been collected using simultaneous upstream and downstream releases of coded wire tagged smolts. Recapture of both groups provides a way to normalize data for confounding variables. These data would be analyzed to see whether there is a statistically significant relationship between survival and either river flow, export rate, or barrier operation.

Questions to be answered:

Is there a statistically significant relationship between river flow and survival? If so, how good is the relationship? What range of flows is covered by the data? How sensitive is survival to river flow? What limitations are inherent in this analysis?

Is there a statistically significant relationship between export rate and survival? If so, how good is the relationship? What range of export rates is covered by the data? How sensitive is survival to export rate? What limitations are inherent in this analysis?

Is there a statistically significant relationship between barrier installation and survival? If so, how good is the relationship? How sensitive is survival to river flow? What limitations are inherent in this analysis?

What additional data or analyses are required to better answer these questions?

Effect of export rate, river flow, QWEST, and Cross Channel gate closure on survival of outmigrating Sacramento River smolts

Peer Review Team: Marty Kjelson, Pat Brandes, Jim White, Jim Buell, Phyllis Fox

Three analyses provide the bases for answering the questions listed below. The analyses are the Newman-Rive analyses, the Geibel analysis, and the analysis of the b(2) experiment results on exports vs. smolt survival.

Is the Geibel analysis valid? What do Newman and Rice think of this analysis? Should Geibel's analysis be used as a basis for defining the relationship between export rate and survival?

What are the relationships between smolt survival and export rate? Over what periods are the relationships valid? How good are the relationships? How sensitive is survival to export rate in these different periods?

What are the relationships between smolt survival and river flow? Over what periods are the relationships valid? How good are the relationships? How sensitive is survival to river flow in these different periods?

What are the relationships between smolt survival and QWEST? Over what periods are the relationships valid? How good are the relationships? How sensitive is survival to QWEST in these different periods?

What are the relationships between smolt survival and Cross Channel gate closure? Over what periods are the relationships valid? How good are the relationships? How sensitive is survival to Cross Channel gate closure in these different periods?

What additional data or analyses are required to better answer these questions?

Relationship between X2 (or Delta outflow) and abundance of estuarine species

Peer Review Team: Wim Kimmerer, Tom Mongan, Bruce Herbold, Chuck Hanson, B.J. Miller

Several articles and other documents form the basis for this analysis, including the following:

Kimmerer's article in IEP Newsletter re-analyzing the X2 relationships

Miller, Mongan, and Britton's article in the IEP newsletter on the same subject

Kimmerer's unpublished analysis of the changes in relationships since the late 1980s

Several e-mails between Kimmerer and Mongan concerning these analyses.

These articles and analyses and any others that have been or could be done would be used to answer the following questions:

For which species are there statistically significant relationships between X2 and abundance?

Have these relationships changed during the period over which data have been collected?

For those species with statistically significant relationships, what is the sensitivity of abundance to values of X2?

For those species with statistically significant relationships, is X2 clearly a surrogate for another parameter? If so, which one?

Are there other benefits of maintaining X2 at lower levels? What are those benefits and what is the certainty of their occurrence?

What additional data or analyses are required to better answer these questions?

The significance of delta smelt take at the export pumps

Peer Review Team: Zach Hymanson, Bruce Herbold, Mike Fris, Jim Buell, Chuck Hanson

The intent of this analysis would be to provide some rough estimate of the significance rather than the precise estimate that would only be available with extensive data collections and analysis efforts.

What is the relationship between delta smelt salvage and direct mortality?

What are the rough estimates of delta smelt population size based on 20 mm surveys, summer townet surveys, or fall midwater trawl surveys?

How does direct mortality compare with population for recent years?

What additional data or analyses are required to better answer these questions?

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